

## Remarks

### 1. About the amended claims

With this submission Claims 2-6, 8, 10-13, 15 are canceled.

A treatment apparatus of waste water containing oil and fat is used for an already existing grease trap required to carry out the removal working of waste oil and fat is described in [0005] and [0007] of the specification of the present invention.

The use of a stopper is described in [0028] of the specification of the present invention.

The bulk specific gravity of an immobilized lipase is in the range from 0.15 to 0.2 is described in [0014] and [0015] of the specification of the present invention.

No new matter has been added.

### Rejection under 37 CFR §1.75(c)

Claims 4, 6, 8, 13, 15 are canceled, this objection is now moot.

### Rejections under 35 U.S.C. 103(a)

In the case of decomposing waste oil and fat in waste water containing oil and fat by utilizing an immobilized lipase, unless waste oil and fat in waste water containing oil and fat and water are uniformly mixed, waste oil and fat are not sufficiently decomposed. (See table 1 of the specification of the present invention.) When waste oil and fat in waste water containing oil and fat and water are not uniformly mixed, the immobilized lipase is not sufficiently in contact with the waste oil and fat, and the decomposition rate of waste oil and fat is extremely low.

Since the aerator of the device of Davis is only the tool for continuously supplying air to the bio-reactor to decompose organic waste in sewers with in-situ microbial seeding, it cannot

uniformly mix waste oil and fat in waste water containing oil and fat and water by only bubbling in the apparatus utilizing the immobilized lipase of the present invention.

Accordingly, waste oil and fat are not sufficiently decomposed by utilizing the aerator instead of the agitating rod of the device of the present invention.

Moreover, Davis doesn't teach that a plurality of the cylindrical net containers and the aerators are indispensable to decomposition of the organic waste. When a plurality of the cylindrical net containers and aerators are installed in the device of Davis, each of them must be installed on the lid of the grease trap, and this requires troublesome installation work.

On the contrary, the apparatus of the present invention is only mounted on an already existing grease trap without troublesome installation work.

In case of installing the apparatus of the Japanese patent 2992981 in an already existing grease trap required to carry out the removal working of waste oil and fat, the use of the grease trap has to be temporarily interrupted, and a cylindrical net container and an agitator have to be installed, which requires troublesome installation work under the inferior situation.

On the contrary, when the apparatus of the present invention is installed on an already existing grease trap, the installation work is simply and cheaply carried out while the already existing grease trap is used as it is.

The aerator of the device of Rebori is only the tool to introduce oxygen into the recirculating liquor in the way of the aerator of Davis. Thus, it cannot uniformly mix waste oil and fat in waste water containing oil and fat and water by only bubbling.

The propeller of the device of Higgins is only the tool to pump the liquid to be aerated upward therethrough, it can't uniformly mix waste oil and fat in waste water containing oil and fat and water.

Moreover, when the apparatus of Rebori or Higgins is installed in an already existing

grease trap, there is the same problem as exists in the apparatus of the Japanese patent 2992981.

In the device of Ozama, since waste water is mixed by using an impeller, or continuously sprinkling, it can't uniformly mix waste oil and fat in waste water containing oil and fat and water.

In the device of Francis, Perez, or Wong, it is not described that waste water is mixed. In the device of Moller, since waste water is mixed by using the aerator, it can't uniformly mix waste oil and fat in waste water containing oil and fat and water.

It is not described in the above-mentioned prior arts that the stopper is provided in claim 16 and 18 of the present invention. The stopper can prevent that the agitated immobilized lipase is suspended on the upper portion of the net body, and it can freely flow in waste water containing oil and fat.

It is not described in the above-mentioned prior arts that the bulk specific gravity of an immobilized lipase is in the range from 0.15 to 0.2 in claim 17 and 19. If the bulk specific gravity is less than 0.15, there are many cases where the immobilized lipase is unevenly distributed and floated nearby the upper portion of the net body, and there is a fear that contact with waste water containing oil and fat becomes poor, and in the case where the bulk specific gravity is larger than 0.2, there are many cases where the immobilized lipase is unevenly distributed and floated nearby the lower portion of the net body; there is also a fear that the contact with waste water containing oil and fat becomes poor. (See [0015] of the specification of the present invention).

Thus one skilled in the art in the present invention can't motivate the apparatus of the present invention with the above-mentioned prior arts.

## Conclusion

It is respectfully submitted that Claims 1, 7, 9, 14 and 16 through 19 are now in condition for allowance and notice to that effect is respectfully requested.

Should the Examiner believe further discussion regarding the above claim language would expedite prosecution they are invited to contact the undersigned at the number listed below.

/Tracy M Heims 53010/

Tracy M Heims

Reg. # 53,010

Apex Juris, pllc  
12360 Lake City Way Northeast, Suite 410  
Seattle, Washington 98125  
Phone: 206-664-0314  
Fax: 206-664-0329  
Email: tracy@apexjuris.com